

LISTING OF THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1. (Previously presented) An apparatus for swapping a disk member, said apparatus comprising:

at least two tong arms for accepting and holding the disk member; and
a driving-mechanism adapted to drive said at least two tong arms, wherein said driving-mechanism is adapted to provide a first movement and a second movement to said at least two tong arms following the topography of a cam structure, said first movement comprising a vertically oriented movement of said at least two tong arms between an up position and a down position, said second movement comprising a horizontally oriented tong movement of said at least two tong arms, wherein said at least two tong arms turn around fulcrums.

2. (Original) The apparatus according to claim 1, wherein said driving-mechanism comprises a lever apparatus and/or spindle means for controlling said first and second movements.

3. (Previously presented) The apparatus according to claim 1, wherein said driving-mechanism, when performing said second movement, moves said at least two tong arms between at least one hold position and at least one release position.

4. (Previously presented) The apparatus according to claim 3, wherein said at least one hold position is two different hold positions and said at least one release position is two different release positions corresponding to said two different hold positions.

5. (Previously presented) The apparatus according to claim 1, wherein said driving-mechanism comprises an elevation device and a manipulator drive.

6. (Previously presented) The apparatus according to claim 1, wherein said at least two tong arms comprise extension members.

7. (Previously presented) The apparatus according to claim 1, wherein said at least two tong arms comprise means for gripping the disk member.

8. (Previously presented) The apparatus according to claim 7, wherein said gripping means comprises at least one grooved circular ring section adapted to a dimension of the disk member.

9. (Original) The apparatus according to claim 1, further comprising a housing including at least a part of said driving-mechanism.

10. (Previously presented) The apparatus according to claim 1, wherein said at least two tong arms are formed to be front-loaded or back-loaded.

11. (Original) The apparatus according to claim 1, wherein said driving-mechanism comprises at least one driving motor.

12. (Previously presented) The apparatus according to claim 1, wherein said at least two tong arms are affixed to said driving-mechanism.

13. (Previously presented) The apparatus according to claim 1, further comprising means for detecting the disk member and/or for detecting a position of said at least two tong arms.

14. (Previously presented) The apparatus according to claim 1, further comprising means for controlling said driving mechanism to control movement of said at least two tong arms.

15. (Previously presented) A method for handling or transporting disk members, comprising:

transporting a first disk member with a first transporter from a first position to an exchange region;

loading said first disk member into said exchange region;

transporting a second disk member with a second transporter to said exchange region;

loading said second disk member from said second transporter to said first transporter;

transferring said first disk member from said exchange region to said second transporter; and

transporting said first disk member to a second position with said second transporter.

16. (Previously presented) A handling line for handling disk members, comprising:

a disk member exchange region;

a first transporter having a first set of arms and a first driving-mechanism adapted to drive said first set of arms, said first driving-mechanism providing said first set of arms with a first movement and a second movement, said first movement comprising a vertically oriented movement and said second movement comprising a horizontally oriented tong movement;

a second transporter having a second set of arms and a second driving-mechanism adapted to drive said second set of arms, said second driving-mechanism providing said second set of arms with a first movement and a second movement, said first movement comprising a vertically oriented movement and said second movement comprising a horizontally oriented tong movement; and

a controller for controlling said first set of arms to move through its first and second movements so that a first disk member is transferred to said exchange region, and said second set of arms to move through its first and second movements so that a second disk member is transferred to said first transporter at said exchange region.

17. (Original) The handling line according to claim 16, wherein said first transporter and/or said second transporter comprises a device selected from the group consisting of an x-y-stage, a chuck, and a robot.

18. (Previously presented) The handling line according to claim 16, wherein said controller controls said second transporter to transfer said first disk member from said exchange region to said second transporter.

19. (Previously presented) The handling line according to claim 18, wherein said controller controls said second transporter to move said first disk member to a second position.

20. (Currently amended) An apparatus for swapping a disk member, said apparatus comprising:

at least two tong arms having grippers for accepting and holding the disk member, said at least two tong arms being adapted to be front-loaded or back loaded with the disk member; and

a driving-mechanism adapted to drive said at least two tong arms, wherein said driving-mechanism is adapted to provide a first movement and a second movement to said at least two tong arms, said first movement comprising a vertically oriented movement of said at least two tong arms between an up position and a down position, said second movement comprising a horizontally oriented tong movement of said at least two tong arms, wherein said driving-mechanism comprises a lever apparatus and/or spindle means for controlling said first and second movements, said lever apparatus and/or spindle means being accommodated in a housing having a front side with guiding apertures for said at least two tong arms, and a back side, wherein said at least two tong arms include crank guiding members extending through said guiding apertures and being formed so that said grippers show a vertical offset to said housing and are accessible from said front side and said back side of said housing to be front-loaded or back-loaded with the disk member.

21. (Previously presented) The apparatus according to claim 20, wherein said driving-mechanism, when performing said second movement, moves said at least two tong arms between at least one hold position and at least one release position.

22. (Previously presented) The apparatus according to claim 21, wherein said at least one hold position is two different hold positions and said at least one release position is two different release positions corresponding to said two different hold positions.

23. (Previously presented) The apparatus according to claim 20, wherein said at least two tong arms comprise extension members.

24. (Previously presented) The apparatus according to claim 20, wherein said at least two tong arms comprise means for gripping the disk member.

25. (Previously presented) The apparatus according to claim 24, wherein said gripping means comprises at least one grooved circular ring section adapted to a dimension of the disk member.

26. (Previously presented) The apparatus according to claim 20, further comprising a housing including at least a part of said driving-mechanism.

27. (Previously presented) The apparatus according to claim 20, wherein said at least two tong arms are formed to be front-loaded or back-loaded.

28. (Previously presented) The apparatus according to claim 20, wherein said driving-mechanism comprises at least one driving motor.

29. (Previously presented) The apparatus according to claim 20, wherein said at least two tong arms are affixed to said driving-mechanism.

30. (Previously presented) The apparatus according to claim 20, further comprising means for detecting the disk member and/or for detecting a position of said at least two tong arms.

31. (Previously presented) The apparatus according to claim 20, further comprising means for controlling said driving mechanism to control movement of said at least two tong arms.

32. (Previously presented) The apparatus according to claim 1, wherein said disk member comprises a wafer or a plate.

33. (Previously presented) The method according to claim 15, wherein said disk member comprises a wafer or a plate.

34. (Previously presented) The handling line according to claim 16, wherein said disk member comprises a wafer or a plate.

35. (Previously presented) The apparatus according to claim 20, wherein said disk member comprises a wafer or a plate.